Application of the Plan Integration for Resilience Scorecard to Practice

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NJ Municipality: Before Hurricane Sandy: Opposing Intentions?

Hazard Mitigation Plan

Comprehensive Plan

Figure LU-4
100 YEAR FLOODPLAIN MAP

Figure LU-6
CONCEPT PLAN MAP

100-year floodplain & Severe repetitive loss designation
Develop and apply a resilience scorecard:

1. To spatially evaluate the coordination of local networks of plans at the neighborhood scale.

2. To spatially assess the degree to which the network of plans targets areas most physically and socially vulnerable.
Policy Score for Each Plan

Comprehensive Plan
Transportation Plan
Hazard Mitigation Plan
Park and Open Space Plan

Composite Policy Score
Plan Integration for Resilience Scorecard
(Physical Vulnerability)

Phase 1
Delineate districts and hazard zones

Phase 2
Determine vulnerability

Phase 3
Score plans

Source: Berke, P. et al. 2015
Plan Integration for Resilience Scorecard – Global Application
NEW RESEARCH
Difference in Land Use Suitability Between Current Zoning and Proposed Future Land Use in Flood-Hazard Areas

1) Zone = high-density residential; plan = med-density residential
2) Zone = industrial; plan = dense mixed-use redevelopment
NEW RESARCH
League City Resilience Scorecard: Composite Policy Scores
Plan and section showing spatial function and flood protection measures; Design impact outputs from the ‘green values’ calculator™
Research Work and Accomplishments

• Funded proposals (July 2018-19)
  • NSF CRISP (theoretical advancement, deep engagement), $2 million
  • One Gulf Program (Harte Foundation), $70,000

• Publications (July 2018-19)
Scientific Contributions: New NSF CRISP 2019-23

• What are the social and economic disruptions caused by cascading failures of interdependent infrastructures?

• How well do networks of plans account for possible failures of interdependent infrastructures?

• How does the strength of neighborhood social networks among interest groups influence plan policies that guide infrastructure investments?
New NSF CRISP: Network of Networks
Research Work and Accomplishments

Presentations (July 2018-2019)

2019  Berke, P., Mitigation Planning for Resilient Cities: A Resilience Scorecard, January 24, Kinder Institute, Rice University, Houston.
2019  Berke, P., Enhancing Policy Coordination and Community Resilience to Hazards and Climate Change, College of Architecture, January 23, University of Michigan, Ann Arbor.
2019  Berke, P., Cities and Planning for Resilience: Networking Across Social, Planning and Infrastructure Domains, Keynote Talk, September, Hunan University, China.
End User Engagement

• City of Norfolk, Paul Shea, Senior Planner
  • Interactions: Training webinar, on-site visit, 10 technical assistances teleconferences Norfolk.
  • Outcomes: Revised network of plans; modified zoning ordinance, included location criteria in network of plans; two successful proposals from HUD totally $140 million
  • After action report on research utilization

• City of Nashua, Justin Kates, Director Emergency Management
  • Interactions: Collaboration with NIST, Training webinar, on-site visit, ongoing monthly technical assistance
  • Outcomes: proposals funded by Nat’l League of Cities.
Norfolk Highlights: Project Impacts

“The Resilience Scorecard was a great tool to allow us to evaluate our existing plans and policies.” (George Homewood, FAICP, CFM, Planning Director, City of Norfolk)

Outcomes

• Revised network of plans
• Modified zoning ordinance
• Changed CIP infrastructure location criteria
• Choice Neighborhood Implementation Grant
• National Disaster Resilience Grant
  • Building resilience: linking built environment, socially marginalized people, and natural environmental systems

Norfolk Resilience Park

St. Paul’s Neighborhood Revitalization
End User Engagement

- NY RISING-Paul Beyer, NY Dept of State; and Coreena Coveallo, NY Dept. of Homeland Security, FEMA Nat’l Mitigation Program
  - Interactions: multiple teleconferences, webinar to county mitigation planners in NY State
  - Expected Outcome: Apply PIRS to Sullivan County, NY

- NIST
  - Interactions: approx. 10 tele-conference calls to coordination.
  - Expected Outcomes: Couple PIRS with the Community Resilience Planning Guide (CRPG) developed by the National Institute of Standards and Technology (NIST) in a manner that allows the two products to be used by community planners in a joint and reinforcing manner.

- TX Sea Grant Community Resilience Collaborative, Heather Wade, Director
  - Interactions: Bi-weekly collaboration to translate research to planning practice
  - Outcome: Employed staff planner to train mitigation planners in Texas coast communities
  - Expected Outcome: Co-apply Scorecard in San Patricio County, Corpus Christi
End User Engagement

- ASFPM, Chad Berginnis, Executive Director
  - Interactions: Joint panel May 2019 conference; Texas A&M and Nashua
  - Proposed Outcomes: Trainings, CFM credit, placed on ASFPM website
- Other professional association
  - APA, Jim Schwab
  - Natural Hazard Mitigation Association
- Trainings & Conferences
  - FEMA Prep Talk, January 2018
  - Texas Sea Grant Program, 1st training February 2018
  - National Hurricane Conference, April 2018
  - FEMA Community Planning & Capacity Building, June 2018
  - City of Nashua Resilience Planning Workshop with NIST, June 2018
  - Louisiana Sea Grant Program, July 2018
  - Texas Sea Grant Program, 2nd training November 2018
  - NY Rising and FEMA webinar, December 2018
Transition to End Users

Develop an instructional curriculum:

• PIRS Guidebook for local practitioners
• Links to webinars, lectures, and workshops given by the Texas A&M team
• Slides for lectures
• Summaries of real world examples of community applications of PIRS for practitioners and policy makers.
• Summaries (3 pgs.) of peer review research publications that focus on the process of community utilizations of PIRS and new capabilities of PIRS.
• Interactive website to include all of the above.
A New Tool for Translating Research to Practice

**Technical Assistance Tasks:**
1) Score plan integration
2) Assess Social & Physical Vulnerability
3) Identify conflicts and opportunities

**Participatory Tasks:**
1) Willing partner communities: contribute staff time, data
2) Staff participate in training sessions
3) Self-evaluate plans, seek public input, draft revisions

Website: ifsc.tamu.edu/getattachment/News/July-2017/Plan-Integration-for-Resilience-Scorecard-Guideboo/Scorecard-(1).pdf.aspx
Anticipated Project Impact

Adopted for Training (and Certificate Programs) by professional Associations
• APA-Hazard Mitigation and Disaster Recovery Division
• ASFPM

Build National Network of Coastal Partners
• Training by Texas Sea Grant Community Resilience Collaborative

Adoption by Federal Partners
• FEMA Community Rating System
• Integrate PIRS with NIST Community Resilience Planning Guide

Explore Copyrights Protection
• Met with TAMU copyright staff, March 21, 2019
How has / will your project be transitioned to end users?

1. **Develop an instructional curriculum**, with case studies, that teaches planners how to use the coupled products correctly and effectively.

2. **Offer certificates to practitioners** through professional association (APA, ASFMP etc.) who successfully complete the instructional curriculum.

3. **Add credits to FEMA’s NFIP Community Rating System** if communities apply PIRS.

4. **Couple PIRS with the Community Resilience Planning Guide** (CRPG) developed by the National Institute of Standards and Technology (NIST) in a manner that allows use by community planners in a joint and reinforcing manner.